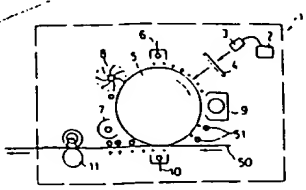
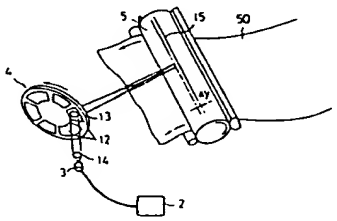
(54) OPTICAL SCANNING DEV[redacted]
(11) 4-62514 (A) (43) 27.2.1992 (19) JP
(21) Appl. No. 2-175096 (22) 2.7.1990
(71) SHARP CORP (72) TETSUYUKI UEDA
(51) Int. Cl⁵. G02B26/10



PURPOSE: To increase the optical scanning efficiency and optical scanning density by providing a semiconductor laser which outputs plural laser light beams as one piece of luminous flux and a hologram which is rotatable, and scanning a surface with plural diffracted light beams at the same time.

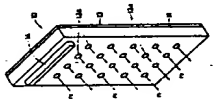
CONSTITUTION: A semiconductor laser is a multifunctional optical element constituted by combining an optical element such as an optical switch and an optical waveguide with a multi-mode or single-mode semiconductor element. The semiconductor laser 3 emits a single piece of luminous flux, which contains plural different-wavelength components. Therefore, when the laser luminous flux is diffracted by the hologram 12, plural pieces of laser luminous flux having different wavelength components are generated corresponding to a difference in wavelength. Those two pieces of laser luminous flux form two scanning lines on the scanned surface 15 at a distance $\triangle y$ perpendicularly to the scanning direction. Those two scanning lines are formed at the same time as the hologram disk 4 rotates.

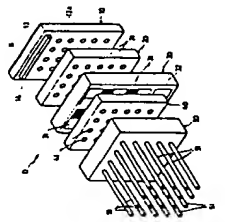


(54) LIGHT EMISSION CONTROL DEVICE
(11) 4-62515 (A) (43) 27.2.1992 (19) JP
(21) Appl. No. 2-174692 (22) 2.7.1990
(71) FUJIKURA LTD (72) SHINZO SUZAKI
(51) Int. Cl⁵. G02F1/13,H01H11/00

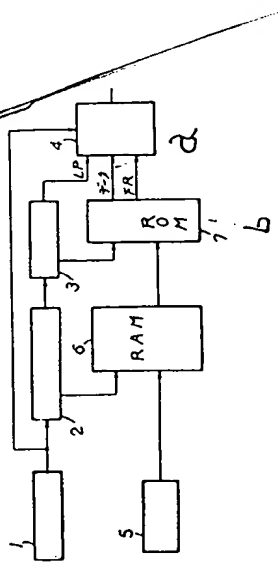
PURPOSE: To easily turn on and off optical transmission to respective optical fibers of an optical fiber array by bringing the light from a light source or face light emitting element under the ON/OFF control of a face type optical switch which has many liquid crystal structure parts.

CONSTITUTION: When the output light r_1 from a laser 14 as an external light source is made incident on the photodetection part 12b of the face light emitting element 10, each light projection projection becomes parallel light through a face lens array 20 for collation to reach the reverse surface of a matrix type liquid crystal structure part 31 of the face type optical switch 30. Each liquid crystal structure part 31 transmits or cuts off the light by the control driving of this face type optical switch 30. The transmitted light r_3 from the liquid crystal structure part 31 at the light transmission part is passed through a face type lens array 40 for convergence and made incident on an optical fiber 51 corresponding to the optical fiber array 50 to go to transmitted light.





(54) LIQUID CRYSTAL DISPLAY DEVICE
(11) 4-62516 (A) (43) 27.2.1992 (19) JP
(21) Appl. No. 2-173883 (22) 30.6.1990
(71) TOSHIBA LIGHTING & TECHNOL CORP (72) GAKUO YAMAGUCHI(1)
(51) Int. Cl⁵. G02F1/133,G09G3/36



PURPOSE: To concentrate a γ function by inverting the voltage polarity of a plus pulse or negative pulse in the center of a previously set time.

CONSTITUTION: A clock generating circuit 1 generates clock pulses, a dot address generating circuit 2 generates a 16-bit dot address according to the clock pulses, and 8-bit video data is generated on a RAM 6 together with 8-bit video data from video data 5. Data is selected on the gradation ROM 7 and outputted together with inverted data. At this time, parallel-series conversion is performed on the ROM 7 and the data are outputted to a liquid crystal driver 5 in series; and the driver 4 drives the liquid crystal of a liquid crystal cell 8 with gradations based upon the data in order, and consequently the pulses are integrated to improve the response, so an after-image is hardly generated and a γ curve is made hard to go to a discrete numeral.

3: gradation counter, b: inverting means, a: data